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Title: I/C PACKAGE/THERMAL-SOLUTION RETENTION MECHANISM WITH SPRING EFFECT

Assignee: Intel Corporation

IN THE CLAIMS

Please amend the claims as follows:

1. (Original) A retention mechanism for mounting an integrated circuit package to a circuit board, comprising:

a dish-shaped, elastically deformable pressure plate, having a first apex and a first periphery spaced away from the first apex, the pressure plate being deformable by applying a first force to the first periphery directed generally towards the first apex;

a dish-shaped, elastically deformable backing plate, having a second apex and a second periphery spaced away from the second apex, the backing plate being deformable by applying a second force to the second periphery directed generally towards the second apex; and

means for simultaneously applying the first and second deforming forces to the first and second peripheries to engage the first apex with a surface of the integrated circuit package and the second apex with a surface of the circuit board so as to effect continuous electrical continuity between the integrated circuit package and the circuit board.

2-3. (Canceled)

- 4. (Original) The retention mechanism of claim 1 further comprising an elastically deformable gasket positioned between the pressure plate and the integrated circuit package.
- 5. (Original) The retention mechanism of claim 4 wherein one or more of the pressure plate, the backing plate, or the gasket define one or more windows to expose one or more selected portions of the plates or the circuit board.

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6. (Original) The retention mechanism of claim 4 wherein the gasket has a height less than about 2 millimeters.

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- 7. (Original) The retention mechanism of claim 6 wherein the gasket has a height less than about 1 millimeter.
- 8. (Original) The retention mechanism of claim 1 wherein the plates are made from a material selected from the group consisting of beryllium copper and steel.
- 9. (Original) The retention mechanism of claim 1 wherein one or more of the first and second peripheries is fractal-shaped.
- 10. (Currently Amended) <u>A retention mechanism for mounting an integrated circuit package</u> to a circuit board, comprising:

a dish-shaped elastically deformable pressure plate, having a first apex and a first periphery spaced away from the first apex, the pressure plate being deformable by applying a first force to the first periphery directed generally towards the first apex;

a dish-shaped elastically deformable backing plate, having a second apex and a second periphery spaced away from the second apex, the backing plate being deformable by applying a second force to the second periphery directed generally towards the second apex, The retention mechanism of claim 1 wherein the backing plate is in contact with the a circuit board, wherein the circuit board has having a back side, and wherein the fractal-shaped second periphery is to enable a plurality of components to be attached to the back side of the circuit board, after the integrated circuit package has been mounted to the circuit board; and

means for simultaneously applying the first and second deforming forces to the first and second peripheries to engage the first apex with a surface of the integrated circuit package and the second apex with a surface of the circuit board so as to effect continuous electrical continuity between the integrated circuit package and the circuit board.

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11. (Currently Amended) A retention mechanism comprising:

a paraboloid, an elastically deformable <u>paraboloid</u> pressure plate, having a concave surface, a convex surface, a summit, and a periphery spaced away from the summit, the pressure plate being deformable by applying a first force to the periphery directed generally towards the summit;

an integrated circuit package having a top and a bottom surface, the convex surface of the pressure plate being contactable by the top surface of the integrated circuit package;

a circuit board having a top and a bottom surface, the bottom surface of the integrated circuit package being contactable by the top surface of the circuit board; and

a paraboloid, an elastically deformable paraboloid backing plate, having a concave surface, a convex surface, a summit, and a periphery spaced away from the summit, the backing plate being deformable by applying a second force, opposing the first force, to the periphery of the backing plate directed generally towards the summit of the backing plate, the bottom surface of the circuit board being contactable by the convex surface of the backing plate; and

one or more fasteners to simultaneously apply the first and second deforming forces to the peripheries of the plates

to engage the top surface of the integrated circuit package with the convex surface of the pressure plate and the bottom surface of the circuit board with the convex surface of the backing plate and

to deform the plates so as to effect continuous electrical continuity between the integrated circuit package and the circuit board.

- 12. (Original) The retention mechanism of claim 11 further comprising a connector interposed between the integrated circuit package and the circuit board.
- 13. (Original) The retention mechanism of claim 12 wherein the connector has a height less than about 2 millimeters.

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14. (Original) The retention mechanism of claim 13 wherein the connector has a height less

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than about 1 millimeter.

15. (Original) The retention mechanism of claim 12 wherein the integrated circuit package is

pinless and the connector is without pin holes.

16. (Canceled)

17. (Previously Presented) The retention mechanism of claim 11 wherein the height from the

summit to the periphery is less than about 1.5 millimeters.

18. (Original) The retention mechanism of claim 11 wherein the summit of the backing plate

is located on the concave surface of the backing plate and the periphery of the backing plate is

located on the convex surface of the backing plate, and the height from the periphery to the

summit is less than about 2 millimeters.

19. (Original) The retention mechanism of claim 18 wherein the height from the periphery to

the summit is less than about 1.5 millimeters.

20. (Original) The retention mechanism of claim 11 wherein the integrated circuit package

includes an organic land grid array.

21. (Original) The retention mechanism of claim 11 wherein the integrated circuit package

includes a flip chip pin grid array.

22. (Original) The retention mechanism of claim 11 further comprising a heat sink in contact

with the concave surface of the pressure plate.

23. (Currently Amended) An electronic assembly comprising:

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a paraboloid, an elastically deformable <u>paraboloid</u> pressure plate, having a concave surface, a convex surface, a summit, and a periphery spaced away from the summit, the pressure plate deformed by first force applied to the periphery directed generally towards the summit;

an integrated circuit package having a top and a bottom surface, the top surface in contact with the convex surface of the pressure plate;

a circuit board having a top and a bottom surface, the top surface of the circuit board in contact with the bottom surface of the integrated circuit package; and

a paraboloid, an elastically deformable paraboloid backing plate, having a concave surface, a convex surface, a summit, and a periphery spaced away from the summit, the backing plate deformed a second force, opposing the first force, applied to the periphery of the backing plate directed generally towards the summit of the backing plate, the convex surface of the backing plate in contact with the bottom surface of the circuit board; and

means for simultaneously applying the first and second deforming forces to the periphery of the pressure plate and the periphery of the backing plate

to engage the convex surface of the pressure plate with the top surface of the integrated circuit package and the convex surface of the backing plate with the bottom surface of the circuit board and

to deform the plates so as to effect continuous electrical continuity between the integrated circuit package and the circuit board.

- 24. (Original) The electronic assembly of claim 23 further comprising a connector interposed between the integrated circuit package and the circuit board.
- 25. (Original) The electronic assembly of claim 23 further comprising an elastically deformable gasket interposed between the pressure plate and the integrated circuit package.

26-31. (Canceled)

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32. (Currently Amended) An apparatus comprising:

a circuit board;

a dish-shaped pressure plate, wherein the pressure plate includes a first central region located generally in the center of the pressure plate, wherein the pressure plate also includes a first periphery, wherein the pressure plate is elastically deformable by applying a first force to the first periphery, and wherein the first central region is to transfer the first force to an integrated circuit package;

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a dish-shaped pressure backing plate, wherein the backing plate includes a second central region located generally in the center of the backing plate, wherein the backing plate also includes a second periphery, wherein the backing plate is elastically deformable by applying a second force to the second periphery, wherein the second central region is to transfer the second force to the integrated circuit package circuit board; and

a set of one or more fasteners to apply the first force to the first periphery and the second force to the second periphery, wherein applying the first and second forces is to effect continuous electrical continuity between the integrated circuit package and the circuit board.

- 33. (Previously Presented) The apparatus of claim 32 further comprising an elastically deformable gasket positioned between the pressure plate and the integrated circuit package.
- 34. (Previously Presented) The apparatus of claim 33, wherein one or more of the pressure plate, the backing plate, or the gasket define one or more windows to expose one or more selected portions of the plates or the circuit board.

35. (Currently Amended) A method comprising:

applying a first force to a dish-shaped pressure plate, wherein the pressure plate includes a first central region located generally in the center of the pressure plate, wherein the pressure plate also includes a first periphery, wherein the pressure plate is

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elastically deformed by the first force, and wherein the first central region transfers the first force to an integrated circuit package;

applying a second force to a dish-shaped pressure backing plate, wherein the backing plate includes a second central region located generally in the center of the backing plate, wherein the backing plate also includes a second periphery, wherein the backing plate is elastically deformed by the second force, wherein the second central region transfers the second force to the integrated circuit package a circuit board, and wherein the applying of the first and second forces effects continuous electrical continuity between the integrated circuit package and [[a]] the circuit board.

- 36. (Previously Presented) The method of claim 32 further comprising: inserting an elastically deformable gasket between the pressure plate and the integrated circuit package.
- 37. (Previously Presented) The apparatus of claim 33, wherein one or more of the pressure plate, the backing plate, or the gasket define one or more windows to expose one or more selected portions of the plates or the circuit board.
- 38. (New) The retention mechanism of claim 10 further comprising an elastically deformable gasket positioned between the pressure plate and the integrated circuit package.
- 39. (New) The retention mechanism of claim 10, wherein one or more of the pressure plate, the backing plate, or the gasket define one or more windows to expose one or more selected portions of the plates or the circuit board.
- 40. (New) The retention mechanism of claim 4, wherein the gasket has a height less than about 2 millimeters.